COUPLING RATIO AND POWER TRANSMISSION TO CORE AND CLADDING STRUCTURE FOR A FUSED SINGLE MODE FIBER

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The development of Single Mode Fiber (SMF) greatly expands in industrial purposes to reach high efficiency and its performance on communication and computer devices. One of important effects is described in this paper namely the fabrication of SMF by unstable fire torch at range temperature 800 to 1300C injected by hydrogen gas flowing at pressure of 1 bar. A coupling ratio of SMF with different ranges in investigated for both core and cladding structure before and after fusion. The pulling length and power transmission are compared to coupling ratio to obtain interesting phenomena which are split by the Y junction. This result is used to develop a wave model propagating along the fiber to core and cladding. The model is used to identify the fractional power of the core and cladding.